

**UNITED STATES DISTRICT COURT FOR  
THE EASTERN DISTRICT OF NEW YORK**

SEOUL SEMICONDUCTOR CO., LTD.,  
and SEOUL VIOSYS CO., LTD.,

Plaintiffs / Counter-Defendants,

-v-

SATCO PRODUCTS, INC.,

Defendant/Counter-Plaintiff.

Case No. 2:19-cv-04951 (GRB/SMG)

**PLAINTIFFS'  
REPLY CLAIM CONSTRUCTION BRIEF**

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## TABLE OF ABBREVIATIONS

The '946 Patent	U.S. Patent No. 8,716,946 (Dkt. No. 1-1; Eisenberg Decl. Ex. 1)
The '631 Patent	U.S. Patent No. 9,343,631 (Dkt. No. 1-2; Eisenberg Decl. Ex. 2)
The '331 Patent	U.S. Patent No. 8,860,331 (Dkt. No. 1-3; Eisenberg Decl. Ex. 3)
The '435 Patent	U.S. Patent No. 9,627,435 (Dkt. No. 1-4; Eisenberg Decl. Ex. 4)
The '210 Patent	U.S. Patent No. 9,716,210 (Dkt. No. 1-5; Eisenberg Decl. Ex. 5)
The '225 Patent	U.S. Patent No. 7,667,225 (Dkt. No. 1-6; Eisenberg Decl. Ex. 6)
The '919 Patent	U.S. Patent No. 9,978,919 (Dkt. No. 1-7; Eisenberg Decl. Ex. 7)
The '967 Patent	U.S. Patent No. 10,134,967 (Dkt. No. 1-8; Eisenberg Decl. Ex. 8)
The '722 Patent	U.S. Patent No. 7,081,722 (Dkt. No. 1-9; Eisenberg Decl. Ex. 9)
The '828 Patent	U.S. Patent No. 9,807,828 (Dkt. No. 1-10; Eisenberg Decl. Ex. 10)
The '899 Patent	U.S. Patent No. 8,513,899 (Dkt. No. 1-11; Eisenberg Decl. Ex. 11).
IPR2020-00247 (paper 6)	Patent Owner's Preliminary Response in <i>Inter Partes</i> Review 2020-00247 of U.S. Patent No. 9,807,828 (Dkt. No. 57-1; Eisenberg Decl. Ex. 12)
IPR2020-00151 (paper 6)	Patent Owner's Preliminary Response in <i>Inter Partes</i> Review 2020-00247 of U.S. Patent No. 9,978,919 (Dkt. No. 57-1; Eisenberg Decl. Ex. 13)
IPR2020-00410 (paper 1)	Petition for <i>Inter Partes</i> Review of U.S. Patent No. 10,134,967 (Dkt. No. 57-1; Eisenberg Decl. Ex. 14)
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IPR2020-00750 (paper 2)	Petition for <i>Inter Partes</i> Review of U.S. Patent No. 8,860,331 (Dkt. No. 57-1; Eisenberg Decl. Ex. 17)

<i>Wiley Elect.</i>	Wiley Electrical and Electronics Engineering Dictionary (Dkt. No. 57-1; Eisenberg Decl. Ex. 18)
<i>Webster's Collegiate</i>	Merriam Webster's Collegiate Dictionary (Dkt. No. 57-1; Eisenberg Decl. Ex. 19)
<i>Modern Elec.</i>	Modern Dictionary of Electronics (Dkt. No. 57-1; Eisenberg Decl. Ex. 20)
<i>Schubert</i>	Light-Emitting Diodes (2003) (Dkt. No. 57-1; Eisenberg Decl. Ex. 21)
<i>Oxford Am.</i>	Concise Oxford American Dictionary (Dkt. No. 57-1; Eisenberg Decl. Ex. 22)
<i>Shackle Decl.</i>	Declaration of Peter W. Shackle, Ph.D., in <i>Inter Partes</i> Review of U.S. Patent No. 7,081,722 (Eisenberg Decl. Ex. 23)
IPR2020-00247 (paper 8)	Decision Denying Institution of <i>Inter Partes Review</i> 2020-00247 of U.S. Patent No. 9,807,828 (Eisenberg Decl. Ex. 24)



Pursuant to the Court’s Scheduling Order (Dkt. 40-1), Plaintiffs Seoul Semiconductor Co., Ltd. (“Seoul Semiconductor”) and Seoul Viosys Co., Ltd. (“Seoul Viosys”) (collectively “Plaintiffs” or “SSC”) hereby file their responsive claim construction brief.

## **I. RELEVANT LEGAL STANDARDS**

The legal standards section of the Responsive Claim Construction Brief (Dkt. 65 at 1) submitted by Satco Products Inc.’s (“Satco” or “Defendant”) provides the Court with little guidance on the law of claim construction. Indeed, the section largely boils down to a reference to the Federal Circuit’s *en banc* decision in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1311-19 (Fed. Cir. 2005). Although Plaintiffs agree that *Phillips* provides a helpful overview, the many cases explaining that decision over the ensuing fifteen years provide additional guidance. Moreover, Defendant’s decision to leave Plaintiffs’ Legal Standards section unremarked upon suggests the parties generally agree regarding those principles.

To summarize, the ultimate goal of claim construction is to provide a jury instruction that can be applied following the parties presentations on infringement and invalidity. *Eon Corp. IP Holdings v. Silver Springs Networks*, 815 F.3d 1314. In adopting that language, the Court is instructed to consider the intrinsic record (*i.e.*, claim language, specification, and prosecution history) and may also consider any extrinsic evidence (*e.g.*, dictionaries, treatises, textbooks, articles, or expert opinion). *Phillips*, 415 F.3d at 1311-19. From within that open-ended universe, the specification is the “single best guide to the meaning of a disputed term.” *MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1329 (Fed. Cir. 2007). Interpreting claims using the specification as a guide, however, is distinct from importing limitations into the claims. *Cont’l Circuits LLC v. Intel Corp.*, 915 F.3d 788, 797 (Fed. Cir.), *cert. denied*, 140 S. Ct. 648 (2019).

Although unrelated to claim construction, Plaintiffs note that Defendant’s Legal Standards section concludes by mentioning its apparent belief that some terms “will be dispositive as to the

patents in which they appear.” (Dkt. 65 at 1.) Plaintiffs disagree with Defendant’s characterization of the record, but will await the proper procedural vehicle to provide its detailed response.

## II. *INTER PARTES* REVIEW PROCEEDINGS

Defendant correctly notes that arguments made by a party during an *inter partes* review proceeding may act as a prosecution disclaimer. (Dkt. 65 at 3 (citing *Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1359 (Fed. Cir. 2017).) Like all such “disclaimers,” however, an alleged surrender of claim scope must be “clear and unmistakable.” *Aylus*, 856 F.3d at 1361 (“Of course, to invoke the doctrine of prosecution disclaimer, any such statements must ‘be both clear and unmistakable.’”). The Federal Circuit has clarified that disclaimers must meet an “exacting” standard. *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1366 (Fed. Cir. 2012). The following language from *Aylus* is exemplary of statements that meet this high standard:

Aylus explained, “the challenged claims require selectively invoking the CP logic and/or CPP logic based on whether the MS and/or MR can communicate with the UE through the local network.” . . . Aylus explained that “this is a key aspect of the claimed invention, which addresses an important objective, namely: reducing the use of expensive bandwidth (e.g., wide area cellular networks) by implementing a least-cost routing decision about how to negotiate media content delivery that utilizes the less costly local wireless network whenever possible.” . . .

*Aylus*, 856 F.3d at 1362 (emphasis added, citations omitted, Court’s emphasis omitted).

## III. DISPUTED CLAIM TERMS<sup>1</sup>

### 1. “phase switch” - U.S. Patent No. 7,081,722, claims 1-3, 11, 12, 15, 17-19, 24

Plaintiffs’ Construction	Defendant’s Construction
<i>A device having on and off states that determines when to turn on to conduct electrical current.</i>	Any device that, when turned on, conducts electrical current. Examples of [a] phase switch include, but not limited to, a N Channel MOSFET, a P-Channel MOSFET, a NPN bipolar transistor, a PNP bipolar transistor, an Insulated Gate Bipolar Transistor (IGBT), an analog switch, a relay, etc.

<sup>1</sup> Although Plaintiffs believe that their constructions of the disputed terms from U.S. Patent 8,513,899 correctly reflect the intrinsic record, Plaintiffs have decided to exclude that patent to narrow the focus of the case. Therefore, terms 7 and 8 are not addressed in this reply brief.

The parties approach the issue of construing the term “phase switch” from two different perspectives. Plaintiffs seek to construe that term within the context of the claims and specification. Defendant, in contrast, presents its argument based solely on a purported definition of the two-word phrase in isolation. Plaintiffs believe that the latter form of construction fails to accord the claim term its proper meaning.

**a) The Passage Cited by Defendant Does not Meet the Exacting Standard for Lexicography**

To invoke the doctrine of inventor lexicography, “the patentee must ‘clearly express an intent’ to redefine the term.” *Thorner*, 669 F.3d at 1365 (quoting *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)). This exacting standard is analogous to the standard for disavowal of claim scope. *Id.* In the case of disavowal, the specification (or prosecution history) must “make[ ] clear that the invention does not include a particular feature . . . by including . . . expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.” *Id.* (emphasis added) (quoting *Scimed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1341 (Fed. Cir. 2001); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002)). Reliance on lexicography for claim construction, therefore, requires objective evidence of the inventor’s intent to provide a definition. Defendant’s purported definition does not meet this standard. Instead, the quoted phrase begins by stating “[t]he phase switch is a general term to indicate any device. . .” Defendant cites no case in which this locution or any similar phrasing has been relied on by a court as a clear expression of an intent to define. Instead, in cases of explicit lexicography, the case law generally relies on clearly definitional language such as “X means Y” or “are defined.” *See Thorner*, 669 F.3d at 1365 (emphasis added). Indeed, even in the single case Defendant cited, an express definition was found because of the use of the word “means” to couple a claim term with its definition. *Martek Biosciences Corp. v. Nutrinova, Inc.*,

579 F.3d 1363, 1380 (Fed. Cir. 2009) (“[patentee] defined the term ‘animal’ in the ’244 patent: ‘The term ‘animal’ means any organism belonging to the kingdom Animalia.’”) (emphasis added).

In addition, Defendant fails to meaningfully explain how its construction gives meaning to the “phase” portion of the term “phase switch.” As Plaintiffs explained in their Opening Brief, Defendant’s construction is effectively coextensive with the meaning of the term “switch.” Indeed, Defendant’s expert admitted as much in his IPR declaration: “the term is defined in the specification of the ’722 patent and has a meaning that is similar to the meaning of the common term ‘switch.’” (Eisenberg Decl. Ex. 23 <sup>2</sup> (Shackle IPR Decl.) ¶26.) Defendant’s expert further acknowledges that the term “phase switch” is not a term of art. (Dkt. 68 ¶65) (“[T]his term does not have a standard meaning”); *see also* (Eisenberg Decl. Ex. 23 (Shackle IPR Decl.) ¶26) (“A ‘phase switch’ is not a common term with a generally understood meaning in this field.”). And Plaintiffs Expert Regan Zane, Ph.D.<sup>3</sup> agrees. Thus, the only place to look for the meaning of this term is in the intrinsic record, which consistently and repeatedly speaks with one voice that a phase switch is “a device having on and off states that determines when to turn on to conduct electrical current.” (Zane Decl. ¶¶23-36.)

Moreover, the fact that the quoted passage includes an open-ended list of potential structures, (*see* Zane Decl. ¶38), indicates a lack of intent to provide a controlling definition. An apt analogy would be a statement that a table might be made of metal, wood or plastic. Such an open ended list of materials would not define what a table is, but instead would suggest to a person having ordinary skill in the art a potential characteristic thereof. So too would the potential

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<sup>2</sup> References to “Ex.” herein refer to the exhibits to the Declaration of Michael B. Eisenberg submitted herewith.

<sup>3</sup> Declaration of Regan Zane, Ph.D. in Support of Plaintiffs Reply Claim Construction Brief herein refer to “Zane Decl.”

components identified in the '722 patent not be an exclusive definition.

**b) Defendant's Construction Excludes a Portion of the Purported Definition**

Defendant's construction should also be rejected because it omits a portion of the very definition it proposes. In its brief, Defendant points to the following passage as the alleged explicit definition of the term "phase switch," but its proposed construction omits any acknowledgement of the underlined concluding sentence:

The phase switch is a general term to indicate any device that, when turned on, conducts electrical current. Examples of the phase switch include, but [sic] not limited to, a N-Channel MOSFET, a P-Channel MOSFET, an NPN bipolar transistor, a PNP bipolar transistor, an Insulated Gate Bipolar Transistor (IGBT), an analog switch, a relay, etc. The 'off' and 'on' of the phase switch can be controlled individually.

((Dkt. 65 at 5) (quoting '722 patent, 3:43-50) (emphasis added).) By omitting the control aspect of the purported definition, Defendant's proposal fails to properly reflect the source material it seeks to import into the claims, and therefore, its proposal should be rejected.

**c) Defendant's "Expert" Declaration Provides no Substantive Support**

Defendant's reliance upon a declaration from its purported expert, Peter W. Shackle, Ph.D. further obscures rather than clarifies that issue. Dr. Shackle adopts the same flawed logic as Defendant by citing purportedly definitional language, but inconsistently providing a construction that omits the on/off control concept from that "definition." (*Compare* Dkt. 68 ¶65 *with id.* at ¶64). Of course, given that the basis of Defendant's construction is an alleged definition from the specification—a purely legal question based on the language used in the specification—his opinion is legally irrelevant. In addition, Dr. Shackle presented a different construction in connection with the IPR petition that Defendants filed against the '722 patent—"any device, that when turned on conducts electrical current." (Eisenberg Decl. Ex. 23 (Shackle IPR Decl) ¶27.) Even if his opinion is deemed relevant (which it is not), his change in position saps that opinion of any substantive

value to the issue presented.

**d) Defendant Fails to Meaningfully Response to Plaintiffs’ Analysis of the Claims and Specification of the ’722 Patent**

Defendant largely leaves Plaintiffs’ analysis of the term “phase switch” in the context of the full claim language unrebutted.<sup>4</sup> As explained in Plaintiffs’ Opening Brief, claim 1—which require both “a phase switch in each of the separate conductive paths” and selectively turning on LEDs “group by group”—directly support Plaintiffs construction. (Dkt. 56 at 4-5). As noted there, the phase switches are the only recited structures associated with that selective activity.

Indeed, rather than substantively respond to Plaintiffs’ analysis, Defendant curiously criticizes Plaintiffs for being consistent with the position it took in the Preliminary Response to corresponding *inter partes* review. (Dkt. 65 at 5). Plaintiffs have been consistent throughout. It is Defendant that has vacillated between seeking to enforce its subjective interpretation of Plaintiffs’ IPR positions as “disclaimers” for certain claim terms, and then criticizing Plaintiffs for remaining true to their IPR position as to this term.

Staying consistent is also an important aspect of interpreting claim terms in view of a patent’s specification. As discussed in the Legal Standards section, claim construction requires a careful balance between interpreting claims in view of the specification and importing limitations into the claims. Reviewing a specification in its entirety to find consistent usage throughout is consistent with the former (proper) form of analysis. *Wisc. Alumni Research Found. v. Apple Inc.*, 905 F.3d 1341, 1351 (Fed. Cir. 2018) (“Where, as here, a patent repeatedly and consistently

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<sup>4</sup> Defendant argues that of claims 2, 4, 6 and 7, which allegedly “all require ‘turning off’ phase switches rather than phase switches that determine they should turn themselves off”, are inconsistent with Plaintiffs’ construction. (Dkt. 56 at 5.) But as explained by Dr. Zane, there is no inconsistency between these claims and the notion that phase switches turn themselves off. (Zane Decl. ¶¶39.)”

characterizes a claim term in a particular way, it is proper to construe the claim term in accordance with that characterization.”). As explained in Plaintiffs Opening Brief, the ’722 patent’s specification consistently describes “phase switches” that determine when to turn on and off. (Dkt. 56 at 5; *see also* Dkt. 66-1 at 6-19 (Plaintiffs’ IPR Preliminary Response); Zane Decl. ¶¶23-36.) Defendant responds that the ’722 patent’s figure 9 is inconsistent with Plaintiffs construction. Plaintiffs disagree.

At the outset, it should be noted that neither Defendant nor its expert challenge the proposition that *all other* disclosed embodiments support Plaintiffs’ construction. Moreover, the patent itself says that the embodiment in Figure 9 is similar to that in Figure 8 and Figure 4—two embodiments that Defendant does not challenge. (Dkt. 1-9 (’722 patent) at 11:30-32 (“FIG. 9 shows a circuit similar to the circuit in FIG. 8, but it uses the feed back arrangement similar to the circuit in FIG. 4.”).) Critically, in describing the Figure 8 embodiment (which uses the same NPN bipolar transistors as Figure 9), the ’722 patent discloses that “Fig. 8 shows a circuit using the same principle of the circuit in FIG. 3, but the Op-Amp function is designed using NPN bipolar transistors (Q).” (Dkt. 1-9 (’722 patent) at 10:34-36 (emphasis added).) Rather than excluding the embodiment of figure 9 as distinct from the remaining embodiments as Defendant suggests, the specification as a whole supports Plaintiffs’ analysis of the consistent usage in the ’722 patent. (See Zane Decl. ¶40; *see also id.* ¶¶22-36)

## 2. “phase voltage” - U.S. Patent No. 7,081,722, claims 2, 3

Plaintiffs’ Construction	Defendant’s Construction
<i>The voltage applied to each group.</i>	The voltage at the downstream end of a group of LEDs (that is separately coupled through a phase switch to ground), i.e., the ‘joint point’ between that LED group and the next one.

Defendant’s Responsive Brief illustrates that Defendant misunderstands Plaintiffs’ construction. A proper understanding of Plaintiffs’ position—as clearly set forth in Plaintiffs’ Opening Brief (Dkt. 56 at 7-8)—eliminates Defendant’s criticism of Plaintiffs’ construction.

Moreover, Figure 1 relied upon by Defendant, is fatal to its own construction.

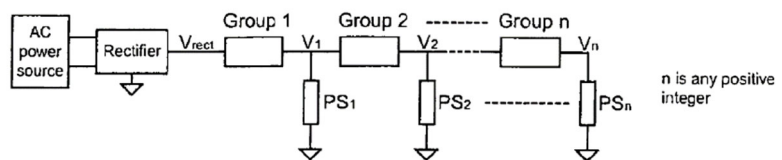
The primary flaw in Defendant’s responsive argument is its failure to contend with Plaintiffs’ actual proposed construction – “*The voltage applied to each group.*” Rather than address that proposed construction, Defendant raises a straw-man argument by “interpreting” Plaintiffs’ construction to require that “the voltage ‘applied’ to each group is the voltage upstream of the group.” (Dkt. 65 at 7 (emphasis in the original).)<sup>5</sup> The word “upstream” appears nowhere in Plaintiffs’ construction. And Defendant’s apparent misunderstanding of Plaintiffs’ position should have been resolved upon review of Plaintiffs’ brief, which unambiguously stated “**Nothing in claim 1 expressly or even impliedly requires that the phase voltage be measured at a particular location** or in a particular manner.” (Dkt. 56 at 7 (emphasis added); *see also* Zane Dec. ¶¶42-43, 45.) With the understanding that “applied” is not so limited, Defendant’s criticism fails.

Figure 1, which Defendant relies on to ostensibly support its construction, is actually fatal to it. Defendant insists that the phase voltage is located “between that LED group and the next one.”(Dkt. 65 at 7.) It then identifies  $V_n$  as one of those phase voltages. *Id.* However, as can be plainly seen, in Figure 1

Figure 1

(reproduced to the right), the rightmost voltage  $V_n$  is *not* in between an LED group and the next one – there is no next one. (See Zane Decl. ¶44.)

DRIVE STRINGS OF LED IN MULTIPHASE



More fundamentally, the attempt to parse whether a voltage (*e.g.*,  $V_1$ ) is the output of one

<sup>5</sup> Defendant’s reliance on the use of the term “applied” in connection with  $V_{rect}$  is not contrary to Plaintiffs’ construction. The portion of the specification relied upon by Defendant speaks at a higher level of generality and relates to the voltage applied to the entire string of LEDs—it doesn’t relate to the phase voltages applied to the various groups. (See Dkt. 65 at 7).



group (*i.e.*, Group 1) or the input to the other (*i.e.*, Group 2) rests on the false premise that the claims necessarily define “phase voltage” in terms of a specific location. As Defendant’s analysis necessarily concedes,  $V_1$  is associated with both Group 1 and Group 2, rendering the distinction it imports into the claims meaningless. The specification also explains that phase voltages can be considered either downstream of or at a phase. (Dkt. 1-9 at 2:19-20 (“Phase switching is done by sensing the downstream phase voltages”; *see also id.* at 2:24-25 (“Phase switching is done by sensing each phase’s own voltage”).) Thus, Defendant’s proposed requirement that phase voltage only be measured downstream should be rejected.

**3. “A light emitting device comprising” - U.S. Patent No. 7,667,225, claims 1, 4-7, 10, 11, 16-19**

<b>Plaintiffs’ Construction</b>	<b>Defendant’s Construction</b>
Limiting preamble, <i>the device is capable of emitting light.</i>	Preamble is not limiting.

Defendant’s primary response with respect to the preamble recitation “[a] light emitting device” comprises reliance on the Patent Trial and Appeal Board’s institution decision. (Dkt. 65 at 8.) The institution decision, however, did not purport to finally resolve the issue, but instead expressly stated: “[o]n this record, and for purposes of this Decision, we do not consider the preamble of claim 1 to be limiting.” (Dkt. 66-2 at 9.) Indeed, the Board “invite[d] the parties to further address this issue during the trial.” (*Id.* at 13 (emphasis added).)

More fundamentally, Plaintiffs disagree with the Board’s preliminary analysis. In particular, the Board concluded without substantive analysis, that “the claims themselves define a structurally complete invention in the claim body, namely a substrate layer, first and second semiconductor layers, and a quantum well layer positioned between the first and second layer and having the required carrier trap portions.” (*Id.*) That preliminary analysis, however, fails to properly assess the “complete invention” in the context of the ’225 patent. From the very start, the specification of the ’225 patent confirms that rather than merely disclosing layers on a substrate,

the inventive concept relates to light emitting devices:

The present disclosure relates to light emitting devices that can be used for light emitting diodes (LEDs) and laser diodes (LDs ). More particularly, the present disclosure relates to a light emitting device that includes at least one carrier trap portion in at least one layer within a multi-quantum well structure.

(Dkt. 1-6 at 1:16-21; *see also id.* at Title (“Light Emitting Device”).) This consistent usage, starting with the title of the of that patent is evidence supporting applying the preamble as limiting. *Deere & Co. v. Bush Hog, LLC*, 703 F.3d 1349, 1358 (Fed. Cir. 2012); *see also Poly-Am., L.P. v. GSE Lining Tech., Inc.*, 383 F.3d 1303, 1310 (Fed. Cir. 2004). Moreover, the Abstract of the invention confirms that “[t]he light emitting device includes a substrate, a first semiconductor layer on the substrate, a second semiconductor layer on the first semiconductor layer, and a multi-quantum well structure including at least one well layer and at least one barrier layer between the first and second semiconductor layers.” (Dkt. 1-6 at Abstract (emphasis added).)

Stated differently, the task for the Court is to determine whether the elements recited in the body of the claim properly represent the “inventive concept.” *Proveris Sci. Corp. v. Innovasystems, Inc.*, 739 F.3d 1367, 1373 (Fed. Cir. 2014); *Vizio, Inc. v. Int’l Trade Comm’n*, 605 F.3d 1330, 1340 (Fed. Cir. 2010) (holding that a preamble is limiting if it is “the essence or a fundamental characteristic of the claimed invention”) (emphasis added); *see also On Demand Mach. Corp. v. Ingram Indus., Inc.*, 442 F.3d 1331, 1343 (Fed. Cir. 2006). That the invention is a light emitting diode is not an “intended use” or “purpose,” but is instead the “essence of the invention” *See Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp.*, 320 F.3d 1339, 1345 (Fed. Cir. 2003). Indeed, the background section of the ’225 patent confirms that the problem to be addressed was deterioration of light emission (Dkt. 1-6 at 1:59-2:2), which gives the fundamental context of the improvements described in the detailed description. The Board and Defendant fail to address the invention as described throughout the patent, and therefore, arrive at an flawed conclusion.

**4. “carrier trap portion” - U.S. Patent No. 7,667,225, claims 1, 4-7, 10, 16-19**

<b>Plaintiffs’ Construction</b>	<b>Defendant’s Construction</b>
<i>A physical shape or a quantum-mechanical energy state that can confine injected electrons and holes.</i>	A portion of a multi-quantum well structure (a physical shape or a quantum-mechanical energy state) that is capable of efficiently using carriers which can be trapped and lost by the dislocations, e.g. a nanoscale indium-rich cluster.

As it does for a number of claim terms, Defendant presents the Court with two different claim constructions. (Dkt. 65 at 10.) Here, Defendant proposes a construction and also presents a modified construction based on the opinion of a purported expert. (*Id.*) Plaintiffs respectfully assert that this failure to take a definitive position renders its analysis both confusing and internally inconsistent. On that basis, Defendant’s constructions should be rejected.

**a) Defendant’s Lexicography Argument is Internally Inconsistent**

Defendant’s assertion that a “definition” from the specification is controlling is inconsistent with its admission that expert opinion is necessary to “narrow the definition provided in the specification.” (Dkt. 65 at 10 (emphasis added).) To act as a definition, “the patentee must ‘clearly express an intent’ to redefine the term.” *Thorner*, 669 F.3d at 1365. By relying on extrinsic evidence to change the purported definition, Defendant concedes that “patentee [did not] ‘clearly set forth a definition of the disputed claim term’ other than its plain and ordinary meaning.” *Id.* Stated differently, Defendant’s analysis relies on two mutually exclusive sources of claim-construction evidence, and therefore, its cobbled-together construction should be rejected.

A review of Dr. Krames’s declaration adds further confusion rather than clarity to the parties’ dispute. In particular, Dr. Krames criticizes the use of the word “confines” in Plaintiffs’ construction (Dkt. 67 ¶68), but then asserts that “[t]he lower energy levels at the carrier trap serve to draw-in and localize carriers” (*id.* at ¶69). Nowhere, however, does he meaningfully explain the difference between confinement and localization beyond asserting that the former “suggests that carriers that have been drawn in are trapped and unable to escape.” (*Id.* at ¶70.) Rather than a

criticism of Plaintiffs construction, Dr. Krames presents an improper straw man of absolute confinement that is neither expressly required nor implied by Plaintiffs' construction. Moreover, by using the word "trapped" as part of his critique, Dr. Krames seems to object to the claim language itself – "carrier trap portion." In other words, the parties agree that absolute containment is not necessary and instead differ solely on the language to capture that concept. Defendant's reliance on expert opinion to contest a non-existent construction, therefore, should not be given any weight in the Court's analysis.

**b) Defendant's Use of the Term "Localizing" Obscures Rather than Clarifies the Claim Language**

Instead, the Court should consider whether the word "confine" or "localizing" properly reflect the simple English-language word "trap" as used in the claims. Plaintiffs assert that, for purposes of instructing the jury, the former provides the clearer and more readily applied meaning from the perspective of a lay jury. Defendant's proposal of "localizing" fails in its fundamental purpose – to "provide the jury with a clear understanding of the disputed claim scope." *Eon Corp.*, 815 F.3d at 1320 (emphasis added). Indeed, Defendant's construction as a whole, which includes a parenthetical and an unnecessary example would only serve to confuse the jury.

**c) Defendant's Construction Improperly Imports Limitations**

Finally, as to the "multi-quantum well structure" and "improved efficiency" portions of its construction, Defendant fails to justify importing those requirements into the claims. Indeed, as to the former, Defendant's brief leaves that aspect of its construction unaddressed. And as to the latter, Defendant incorrectly asserts that "efficiently using . . . describe[s] how the carrier the carrier trap influences the carriers." (Dkt. 65 at 10.) "Efficiently" is not a description of "how," but is instead an adverb that, at best, provides a qualitative description of a resulting benefit. Such an unrecited benefit, however, is not a proper construction of what a "carrier trap portion" is. *See*

*i4i Ltd. P'ship v. Microsoft Corp.*, 598 F.3d 831, 844 (Fed. Cir. 2010) (holding that an unrecited “benefit” should not be imported into the claims); *see also Arthrex, Inc. v. Smith & Nephew, Inc.*, 935 F.3d 1319, 1329-31 (Fed. Cir. 2019) (holding that an unrecited functional requirement should not be imported into a structural claim); *Toshiba Corp. v. Imation Corp.*, 681 F.3d 1358, 1368 (Fed. Cir. 2012) (holding that an unrecited “purpose” should not be imported into the claims).

**5. “[band gap energy decreasing in] a curved line shape from a periphery of the carrier trap portion to a center of the carrier trap portion” - U.S. Patent No. 7,667,225, claim 4**

Plaintiffs’ Construction	Defendant’s Construction
Plain and ordinary meaning or <i>the energy difference between valence and conduction bands falls according to a rounded profile from the outer part of the carrier trap portion to its center.</i>	Indefinite.

Because Defendant withdrew its proposal for this claim term (Dkt. 65 at 11), no response is warranted. Instead, the parties agree that this term means “*the energy difference between valence and conduction bands falls according to a rounded profile from the outer part of the carrier trap portion to its center.*”

**6. “a carrier trap cluster formed by clustering at least two carrier trap portions” - U.S. Patent No. 7,667,225, claim 19**

Plaintiffs’ Construction	Defendant’s Construction
Plain and ordinary meaning or <i>a group of two or more carrier traps located relatively close to each other.</i>	Product-by-process limitation. For purposes of infringement: plain meaning, i.e. a carrier trap cluster formed by clustering at least two carrier trap portions. For purposes of invalidity: a group of two or more carrier trap portions located relatively close to one another.

With respect to this claim term, Defendant’s analysis ignores the Court’s fundamental role in claim construction – to resolve “a fundamental dispute regarding the scope of a claim term.” *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008); *see also id.* at 1361. In other words, courts are not required to weigh in on every potential variance between the parties’ proposals, but instead are instructed to resolve actual disputes. Here, there is none. The language of the claims as written will inform the jury of the scope and meaning for this term.

As Plaintiffs explained in their Opening Brief, the claim as written reflects the “truism that the result of ‘clustering’ is a ‘cluster.’” (Dkt. 56 at 14.) In other words, by identifying a cluster, the fact that clustering occurred is self-evident. Defendant does not respond to or even acknowledge this simple truism. (Dkt. 65 at 11-12.) Instead, without identifying a fundamental dispute that necessitates the Court’s consideration, Defendant insists that the jury be instructed with a confusing 41-word construction that fails to clarify the simple claim language as written. As explained in *Semiconductor Energy Lab. Co. v. Samsung Electronics. Co.*, No. 09-CV-01-BBC, 2009 WL 3731959, at \*1 (W.D. Wis. Nov. 4, 2009) “[c]laims construction is not an academic exercise.” Here, the claim as written sufficiently addresses the proper claim scope, and no further explanation or gloss is necessary.

**9. “[the input voltage to periodically change during a period and to have a] first voltage value, which does not turn on the plurality of light emitting cells, after a first peak value” U.S. Patent No. 8,716,946, claim 1**

<b>Plaintiffs’ Construction</b>	<b>Defendant’s Construction</b>
<i>During each regularly occurring rise and fall of the applied voltage, there is a peak and a voltage after the peak that is below the threshold voltage of the light emitting cells.</i>	The input voltage to the light emitting cell array has a first voltage value which does not turn on the plurality of light emitting cells, at a point in time after the input voltage to the light emitting cell array reaches a first peak value.

As an initial matter, Plaintiffs note that Defendant’s analysis of the preamble recitation “light emitting device” in the ’225 patent’s claims (term 3 above) is in stark contrast with its analysis here. Despite the fact that the former term appears in the claims, is the title of the patent, and is used throughout the specification, Defendant urges that the claims are not directed to light emitting devices. Here in contrast, Defendant urges that “[t]he claim also distinguishes between the overall ‘light emitting device’ and the ‘light emitting cell array’ it contains.” (Dkt. 65 at 24-25.) In other words, Defendant employs the claims’ preamble as a limitation to distinguish a recitation from the body of the claim. This implicit reliance on the preamble recitation “light emitting device” (not coincidentally the same preamble as disputed with respect to claim 1 of the

'225 patent) cannot be reconciled with Defendant's previous argument. Defendant's conspicuous reversal of position, therefore, materially weakens its analysis of both preambles.

Moreover, Defendant employs an unambiguously results-oriented approach to construe the claims based on the "delay-phosphor embodiment." (Dkt. 65 at 23.) Indeed, Defendant urges that "under Satco's construction, Satco's accused products do not infringe, because they do not use a delay phosphor." (*Id.* at 24.) Nothing in the claim as written requires a "delay phosphor," which comprises an additional requirement that Defendant seeks to improperly import into the claims.

Similarly, Defendant's apply a narrow construction for the term "input voltage" in order to suggest that non-infringement must follow. Claim 1 recites:

A light emitting device, comprising:

[a] a light emitting cell array configured to receive an input voltage and comprising a plurality of light emitting cells connected in series on a substrate,

[b] the plurality of light emitting cells to emit light in response to the input voltage, the input voltage to periodically change during a period and to have a first voltage value, which does not turn on the plurality of light emitting cells, after a first peak value,

[c] wherein the light emitting device emits light comprising a periodically changing luminous intensity in response to the input voltage, the periodically changing luminous intensity of the light emitting device has a second peak value and a minimum value, the minimum value of the periodically changing luminous intensity is greater than zero when the input voltage has the first voltage value, and wherein each light emitting cell comprises an inclined side surface.

Without evidence or analysis, Defendant asserts that the term "input voltage" as used in element [a] above is limited solely to the amplitude of the voltage as used directly by the cells of the "light emitting cell array." Nothing in the claim itself requires that narrow meaning. More specifically, the plain language of the term "input voltage" expressly requires nothing more than that a voltage is input. That express language can plainly be met by a voltage that is input to the "light emitting device," so long as "the light emitting cell array [is] configured to receive" that voltage.

Defendant's contrary argument is premised on the theory that a voltage cannot be received

by the “device” and the “cell array” on the device. (Dkt. 65 at 25 (“the ‘input voltage’ is received by the ‘cell array,’ not the ‘device.’”) (emphasis added).) Nothing in claim 1, however, precludes an interpretation encompassing a voltage that is input to the device, and that is also received directly or indirectly by the cell array. Absent such words of exclusion, such a narrow interpretation is not warranted. *See MEMS Tech. Berhad v. Int’l Trade Comm’n*, 447 F. App’x 142, 152 (Fed. Cir. 2011); *see also ICM Controls Corp. v. Honeywell Int’l, Inc.*, 256 F. Supp. 3d 173, 201 (N.D.N.Y. 2017); *WeddingChannel.com, Inc. v. The Knot, Inc.*, No. 03 Civ.7369, 2005 WL 165286, at \*10–12 (S.D.N.Y. Jan.26, 2005). Moreover, the use of the phrase “configured to” expressly suggests the possibility of intervening circuitry via which the “input voltage” can be “received by” the light emitting cell array.

As to Defendant’s discussion of Plaintiffs’ position from the Northern District of Texas (Dkt. 65 at 25), nothing said there is remotely contradictory to its position here. The “first voltage value” can be “a characteristic of the ‘input voltage’” under Plaintiffs’ current construction.

And finally, nothing said during the prosecution of the ’946 patent can reasonably be interpreted to meet the clear-and-unmistakable-disclaimer standard. More specifically, nowhere does Defendant identify a purported disclaimer of an “input voltage” being directly or indirectly received by a cell array. Instead, Defendant merely points to the true statement from the prosecution history that the cited prior art did not disclose “any feature in which a minimum value of luminous intensity emitted from a light emitting device is substantially greater than zero when the input voltage value has a first voltage value that does turn on the plurality of light emitting cells.” (Dkt. 65 at 25.) Nothing in that statement required the “light emitting cells” to directly receive the “input voltage” or otherwise disclaimed any specific relationship between the “light emitting cells” and the “input voltage.” Instead, as shown in figures 11 through 16 of the ’722 patent, the applicants merely pointed out the fact that in the prior art ’722 patent, there are time



periods where the voltage is too low to turn on light emitting cells, and during those time periods, the embodiments according to the '722 patent would not have emitted light.

**10. “LED chip comprising: an array of light emitting cells” / “a light emitting diode (LED) chip comprising a plurality of light emitting cells” -  
U.S. Patent No. 8,860,331, claim 1, 11**

<b>Plaintiffs’ Construction</b>	<b>Defendant’s Construction</b>
<i>An arrangement of at least two discrete light emitting semiconductor structures on a growth substrate.</i>	Plain meaning – no construction necessary.

**a) Defendant’s Silence Indicates Its Inability To Craft A Reasonable Construction**

With respect to this claim term, rather than substantively engage, Defendant unhelpfully asserts that no construction is necessary. In other words, Defendant’s sole position is that the jury requires no construction and can instead apply the claim language as written. Defendant, however, does not assert that the scope and meaning of “light emitting cell” is within the knowledge of lay jurors, effectively conceding that a construction should be provided.

At heart, the dispute relates to the relationship between the terms “LED chip” and “light emitting cells” as used in the '331 patent. Plaintiffs assert that the recited “LED chip” is a structure that includes at least two light emitting cells on the substrate on which they were grown (*i.e.*, formed). Defendant, identifies no meaning for that relationship. Instead, Defendant irrelevantly assert that “as a person of ordinary skill would know, some LED chips are made by removing the growth substrate (often to replace it with something else).” (Dkt. 65 at 26.) The issue, however, is not how a person having ordinary skill in the art would have interpreted the term “LED chip” in a vacuum, but instead how such a person would have interpreted that term as used to describe a structure having “an array of light emitting cells.” Stated differently, the dispute is how the term “LED chip” would have been understood when used to characterize a higher-order structure that includes multiple lower-order “light emitting cells”; which Defendant fails to address.

**b) The Declaration Submitted by Defendant Supports Plaintiffs' Position**

Defendant relies on a declaration submitted by Dr. Michael Krames, who in turn references a 2008-era patent on which he is a named inventor. That patent (U.S. Patent 8,062,916 (Dkt. 66-23)), however, uses an entirely different nomenclature from that used in the '331 patent. More specifically, in contrast to the '331 patent, which uses the term “chip” to describe a higher-order structure containing “cells”, Dr. Krames’s patent uses the term “chip” to characterize a lower order structure contained within a higher-order “module.” (Dkt. 66-23 at Abstract (“Individual flip chip LEDs are formed by trenching or masked ion implantation. Modules containing a plurality of LEDs are diced and mounted on a submount wafer.”) (emphasis added); *see also id.* at 2:39-41 (“The LEDs/substrate are then diced to create the LED modules with series-connected LEDs, and the LEDs are then mounted as flip chips onto a submount wafer.”)).

At best, the term “chip” as used in the '331 patent’s claims corresponds functionally (but not structurally) to the higher-order collection of light emitting units in the form of a “module” as used in Dr. Krames’s patent. And importantly, the cited patent does not disclose a structure that corresponds to lower-order “cells” within a higher-order “chip” as disclosed in the '331 patent. Indeed, the term “cell” appears nowhere in that patent. (*See, generally*, Dkt. 66-23.)

In summary, Defendant’s failure to identify a plain and ordinary meaning for the claim term “light emitting cell” supports Plaintiffs’ assertion that the term was coined to describe the arrangement of discrete light emitting semiconductor structures on a growth substrate. And in the absence of any counterproposal, the Court should adopt Plaintiffs construction – “*An arrangement of at least two discrete light emitting semiconductor structures on a growth substrate.*”

**c) Defendant’s Specification Citations Do Not Support Its Construction**

Defendant asserts that the word “grow” is used only “one time” in the '331 patent’s specification. (Dkt. 65 at 27.) That argument, however, ignores the repeated description of the

underlying concept, *i.e.*, the substrate on which the cells are “formed”:

- “The bridge rectifier may be positioned on the substrate. Accordingly, the bridge rectifier may be formed together with the light emitting cells.” (Dkt. 1-3 at 5:61-63 (emphasis added).)
- “The light emitting cells 30 can be formed by forming the respective semiconductor layers and an electrode layer on the substrate 20 and then patterning them using photo lithography and etching processes.” (*Id.* at 8:43-46 (emphasis added).)
- “The substrate 20 may be a substrate made of Al<sub>2</sub>O<sub>3</sub>, SiC, ZnO, Si, GaAs, GaP, LiAl<sub>2</sub>O<sub>3</sub>, BN, AlN or GaN, and selected depending on the material of a semiconductor layer to be formed on the substrate 20.” (*Id.* at 8:46-49 (emphasis added).)
- “Referring to FIG. 7, the light emitting device comprises an array of light emitting cells C1 to C<sub>n</sub> connected in series. The array is formed on a single LED chip.” (*Id.* at 9:48-50 (emphasis added).)
- “That is, the first and fourth diode portions 410 to 440 may be formed on the same substrate while forming the light emitting cells 30.” (*Id.* at 15:35-37.)

The sole distinction between the “growth substrate” and the “substrate on which the cells were formed” is that the former is a simpler and more accessible phrase for the jury to apply.

**11. “A light-emitting diode chip configured to emit light of a first wavelength range and light of a second wavelength range, comprising” – U.S. Patent No. 9,343,631, claim 1**

Agreed Construction
Preamble is limiting. Plain meaning, <i>i.e.</i> , the light emitting diode chip is configured to emit light of a first wavelength range and light of a second wavelength range.

In order to minimize the number of disputes, Plaintiffs adopted Defendant’s proposed construction of this term in its Opening Brief. (Dkt. 56 at 4 n.3.) Rather than accept Plaintiffs’ agreement, Defendant improperly raises an entirely different dispute in order to present an equally

improper non-infringement theory at the claim construction stage. (Dkt. 65 at 29.) Because the agreed construction presents the newly identified term as written, *i.e.*, without proposed construction, Defendant's attempt to manufacture a new dispute should be rejected by the Court.

To the extent that the Court deems it proper to address Defendant's new and untimely position, that construction should still be rejected. The precise nature of Defendant's construction is unclear, but the apparent meaning underlying its argument is that a phosphor cannot be considered part of a "light-emitting diode chip" if the phosphor is added at the packaging stage rather than earlier in the process. Importantly, Defendant does not assert that a phosphor is distinct from a "light-emitting diode chip," *i.e.*, cannot be a part thereof. To the contrary, the language of claim 1 expressly encompasses phosphor as a part of a "light emitting diode chip":

1. A light-emitting diode chip configured to emit light of a first wavelength range and light of a second wavelength range, comprising:

\* \* \*

a phosphor disposed on the light-emitting structure[.]

(Dkt. 1-2 at 14:12-24 (emphasis added).) Because the phosphor is expressly recited as a part of the recited "light emitting chip," there can be no fair argument that a phosphor cannot be part of a light emitting diode chip. Relatedly, Defendant's argument about the process step at which a phosphor is added is irrelevant to the express language of claim 1, which merely identifies the physical position of the "phosphor" relative the "light-emitting structure," *i.e.*, the former must be "disposed on" the latter. Whether that deposition occurs as part of packaging is irrelevant to the claim language, which fails to mention a package at all.

The proper construction, therefore, is the parties agreement "*the light emitting diode chip is configured to emit light of a first wavelength range and light of a second wavelength range.*"

## 12. "second insulation layer" - U.S. Patent No. 9,627,435, claim 1

Plaintiffs' Construction	Defendant's Construction
Plain and ordinary meaning or <i>a second layer</i>	An insulation layer that protects the second

<i>of material that lacks conductivity</i>	conductive material and first insulation layer.
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The sole dispute between the parties with respect to the “second insulation layer” is whether that term should be construed based on the ordinary meaning of what such a layer is (as proposed by Plaintiffs) or instead, whether specification’s description of a “protecting insulation layer” must be imported into the claims (as proposed by Defendant). On this issue, the law is clear – an unrecited benefit or purpose should not be imported into the claims. *See Arthrex*, 935 F.3d at 1329-31 (holding that an unrecited functional requirement should not be imported into a structural claim), *Toshiba*, 681 F.3d at 1368 (holding that an unrecited “purpose” should not be imported into the claims). As explained in *Ecolab, Inc. v. Envirochem, Inc.*, 264 F.3d 1358 (Fed. Cir. 2001), “[w]here the function is not recited in the claim itself by the patentee, we do not import such a limitation.” *Id.* at 1367 (emphasis added); *see also Toro Co. v. White Consol. Indus., Inc.*, 266 F.3d 1367, 1371 (Fed. Cir. 2001) (“An invention claimed in purely structural terms generally resists functional limitation.”) (emphasis added). Applying that law here, the sole issue of claim construction should be to define the term “insulation layer.” Defendant, however, ignores that issue by presenting the term without construction, and instead improperly imposing a functional description based on a disclosed embodiment. Defendants’ construction, therefore, should be rejected. Instead, the correct construction of “second insulation layer” is “*a second layer of material that lacks conductivity.*”

### 13. “near the active region” - U.S. Patent No. 9,716,210, claims 1, 22

Plaintiffs’ Construction	Defendant’s Construction
Plain and ordinary meaning or <i>close to the active region</i> .	Plain meaning, i.e., “near the active region” is mutually exclusive of the active region.

Rather than address Plaintiffs’ Opening Brief, Defendant suggests that there is no meaningful difference between the parties’ proposals. (Dkt. 65 at 32.) Although Plaintiffs agree that there does not appear to a substantive distinction, they maintain, as stated in their Opening

Brief, that Defendants’ construction is needlessly obtuse. (Dkt. 56 at 22.) Plaintiffs assert, therefore, that Defendant’s construction should be rejected in favor of the claim term as drafted or the simple language “*close to the active region*.”

**14. “a spacer layer . . . having a bandgap smaller than that of the barrier layer and greater than that of the quantum well layer” - U.S. Patent No. 9,716,210, claims 1, 6**

Plaintiffs’ Construction	Defendant’s Construction
The bandgap of each individual sublayer of the spacer layer has a bandgap that is smaller than the bandgap of the barrier layer and greater than the bandgap of the quantum well layer.	Ordinary meaning: the bandgap of the spacer layer (as opposed to each individual sub-layer) is smaller than the bandgap of the barrier layer and greater than the bandgap of the quantum well layer.  Seoul’s Patent Owner Preliminary Response in IPR2020-00248 has disclaimed the ordinary meaning of this limitation. As required by Seoul’s prosecution disclaimer, this limitation requires the bandgap of each individual sublayer of the spacer layer to have a bandgap that is smaller than the bandgap of the barrier layer and greater than the bandgap of the quantum well layer.

As discussed throughout this brief, Defendant confusingly presents multiple constructions with respect to a number of claim terms. Here, Defendant’s first construction purports to be based on “[o]rdinary meaning.” (Dkt. 65 at 32-33.) Defendant concedes, however, that its first proposed construction should not be adopted by the Court. (*Id.*) That construction, therefore, appears to serve no relevant purpose, and instead can only cause confusion regarding Defendant’s actual position. However, to the extent that Defendant asserts that it has somehow reserved the right to later seek its alternative construction, Plaintiffs will strongly object to that form of gamesmanship.

As to Defendant’s second “construction” (Dkt. 65 at 32-33), here again the form of that construction appears designed more to obscure than address the scope and meaning of the claim term. In particular, as written the proposal is more argument than construction. The purpose of claim construction is to instruct the jury on what the claim term means. *Eon Corp.*, 815 F.3d at 1320. There can be no legitimate purpose to instructing the jury with argument. Moreover, no disclaimer occurred. Plaintiffs argued for the correct claim construction during *inter partes* review, thus disclaiming nothing. Regardless, even if Defendant’s analysis were correct, presenting the

jury with argument rather than an instruction would be improper as a matter of law. *See Cordis Corp. v. Bos. Sci. Corp.*, 561 F.3d 1319, 1337 (Fed. Cir. 2009) (“it is improper to argue claim construction to the jury”) (emphasis added, citations omitted); *see also ATEN Int’l Co. v. Uniclass Tech. Co.*, 932 F.3d 1364, 1370 (Fed. Cir. 2019). Restated – it matters not from the jury perspective what route the Court took to reach the final instruction, whether that route was ordinary meaning, lexicography, disclaimer, or agreement of the parties (the actual one taken here). Instead, the final destination, the controlling instruction, is all that matters. Here, that construction should be “*The bandgap of each individual sublayer of the spacer layer has a bandgap that is smaller than the bandgap of the barrier layer and greater than the bandgap of the quantum well layer.*”

**15. “adjacent” - U.S. Patent No. 9,716,210, claim 4**

<b>Plaintiffs’ Construction</b>	<b>Defendant’s Construction</b>
Plain and ordinary meaning or <i>near</i> .	Plain meaning, i.e., directly next to.

Defendant’s analysis of the claim term “adjacent” is largely inscrutable. In particular, rather than seek to defend its proposed construction – “directly next to” – Defendant raises an entirely different dispute regarding whether the term “adjacent” excludes the presence of “intervening layers of the same type.” (Dkt. 65 at 34.) To accomplish this change in position, Defendant asserts that Plaintiff “misstates Defendant’s position . . . [by] suggesting that only one layer can be ‘directly’ next to the active region.” (*Id.* at 35 (emphasis added).) Plaintiffs object to Defendant’s assertion that a misstatement was made. Although Defendant may now desire a construction broader than the “directly next to” construction it initially sought, justifying its change in position by seeking to blame Plaintiffs is not well taken. The Court should simply resolve this issue by rejecting Defendant’s actual construction rather than addressing the newly raised issue.

To the extent that the Court deems it necessary to address this new issue, Defendant’s unstated construction should be rejected on the merits. Rather than fairly seek to construe the term “adjacent,” Defendant asserts that claim 4 uses “odd phrasing” that must be resolved by reference

to an embodiment disclosed in the '210 patent. Contrary to Defendant's assertion, the term "adjacent", whether considered alone or in the context of claim 4, is not remotely "odd." Indeed, Defendant largely concedes that the ordinary meaning of "adjacent" is consistent with Plaintiffs' construction – "near." (Dkt. 65 at 35.) Rather than accept that ordinary meaning, Defendant references an excerpt from the '210 patent. (*Id.*) Defendant, however, does not assert that that excerpt is definitional or provides a disclaimer, and therefore, this is merely another example of improperly importing requirements into the claims. *Thorner*, 669 F.3d at 1366.

**16. "dimming level detector configured to detect a dimming level corresponding to the drive voltage" - U.S. Patent No. 9,807,828, claim 1**

Plaintiffs' Construction	Defendant's Construction
<i>A circuit that detects a signal corresponding to the drive voltage and outputs a detected dimming level to the LED driving module.</i>	<p>Ordinary meaning: a circuit that normalizes the drive voltage in order to produce a voltage that represents the dimming level, as shown for example in Figure 6.</p> <p>Seoul's Patent Owner Preliminary Response in IPR2020-00247 has disclaimed the ordinary meaning of this limitation. As required by Seoul's prosecution disclaimer, this limitation requires a detector that both detects a dimming level and outputs a detected dimming level, i.e. the amount by which to dim the LEDs, not a value that merely corresponds to a detected dimming level.</p>

As it does for a number of terms, Defendant confusingly presents two materially different claim constructions. (Dkt. 65 at 37.) Based on the argument presented (*id.* at 37-38), it appears that Defendant is again only pursuing the alleged disclaimer.

Defendant's argument fails at the outset, as it cannot meet the exacting standard of disclaimer. *See Cont'l Circuits*, 915 F.3d at 798 ("To operate as a disclaimer, the statement in the prosecution history must be clear and unambiguous, and constitute a clear disavowal of scope.") (citations omitted, emphasis added); *see also Openwave Sys., Inc. v. Apple Inc.*, 808 F.3d 509, 513 (Fed. Cir. 2015) (the cited statement must "be so clear as to show reasonable clarity and deliberateness, and so unmistakable as to be unambiguous evidence of disclaimer.") (citations omitted, emphasis added). Defendant relies on three statements, none of which meet that standard.



Indeed, the mere fact that Defendant purports to rely on three distinct statements that all allegedly meet the high standard for disclaimer suggests that Defendant is simply grasping at straws.

The first alleged disclaimer is nothing more than an argument for the very same claim construction that Plaintiffs urge here. In particular, Defendant cited Plaintiffs' IPR statement that "the meaning of this claim term requires both detecting a dimming level and outputting a detected dimming level." (Dkt. 65 at 37 (citing Dkt. 66-15 at 28).) That Plaintiffs sought the proper construction for this claim term and continue to pursue that meaning here is not a disclaimer of anything. Defendant's confusing and irrelevant argument should be ignored by the Court.

The second alleged disclaimer is a statement criticizing Defendant's invalidity theory for being inartfully drafted. Dkt. 65 at 37. The whole statement in context reads as follows:

Indeed, Petitioner seems to acknowledge this lack of detection of dimming level in its failure to address what it is the "dimming level detector" must detect. Petitioner attempts to avoid addressing this hole in its prior art by arguing that the "scaled down output voltage" in Kim-220's LADU merely "corresponds" to a "dimming level." Thus, Petitioner consciously avoids contending that the "scaled down output voltage" is indicative of a dimming level—i.e., the amount by which to dim the LEDs—a standard it knows its art cannot meet.

(Dkt. 66-15 at 30.) Simply put, it is unclear how pointing to an admission by Defendant could function as a disclaimer of claim scope. More specifically, rather than identify a "dimming level," Defendant conceded that it was relying on something other than a "dimming level." Defendant fails to provide a legal basis for concluding that a defendant's admission can act as a disclaimer against a plaintiff. Disclaimers must be based on a plaintiff's own statements. *See Sorensen v. Int'l Trade Comm'n*, 427 F.3d 1375, 1379 (Fed. Cir. 2005) ("it is the applicant, not the examiner, who must give up or disclaim subject matter that would otherwise fall within the scope of the claims").

The third alleged disclaimer comes—yet again—from a statement made in the claim construction section of Plaintiffs' preliminary response. (Dkt. 65 at 38 (citing Dkt. 66-15 at 12).) The quote is taken again from a discussion of how the claims support the very same construction

that Plaintiffs’ urge here. As above, the only conclusion from that discussion is that Plaintiffs’ urged that the Patent Office adopt the proposed construction they seek here.

Finally, even if Defendant is correct that a disclaimer occurred, Defendant still fails to support its full construction based on that purported disclaimer. More specifically, Defendant does not identify where Plaintiffs asserted that a “dimming level detector” should be construed to mean “a detector that . . . .” If this proposal is intended to narrow or broaden the claim relative to the claim language, Defendant should have explained the basis for its proposal. And if Defendant’s position is that no change was intended, it should explain why restating the claim language as drafted would assist the jury in understanding the scope and meaning of the claim term.

**17. “block the drive current” - U.S. Patent No. 9,807,828, claim 1**

<b>Plaintiffs’ Construction</b>	<b>Defendant’s Construction</b>
Plain and ordinary meaning, or in the alternative, <i>obstruct the drive current</i> .	Plain meaning, i.e., stop the flow of the drive current.

The source of Defendant’s construction is the following passage from the ’828 patent: [i]n addition, the AC-driven LED lighting apparatus according to the exemplary embodiment *blocks the drive current* from being supplied to all of the LED groups . . . . For example, the AC-driven LED light apparatus . . . *stops* driving all of the plural LED groups . . . .” (Dkt. 65 at 38-39 (emphasis added by Defendant, quoting Dkt. 1-10 at 10:21-39).) The quoted passage, however, does not equate “blocks the drive current” with “stop the flow of the drive current” as Defendant suggests. Instead, the verb “stop” is used to characterize whether the LED groups are being driven. An LED is being driven when the voltage applied is sufficient to produce light, called a “forward voltage level” in the ’828 patent:

[T]he term “first forward voltage level” means a critical voltage level capable of driving a first LED group, the term “second forward voltage level” means a critical voltage level capable of driving a first LED group and a second LED group connected to each other in series, and the term “third forward voltage level” means a critical voltage level capable of driving the first to third LED groups connected to each other in series.

(Dkt. 1-10 at 6:31-38 (emphasis added).) The critical voltage here is the minimum turn on voltage that begins the emission of light. (*Id.* at 6:48-51 (“the plural LED groups are sequentially turned on to emit light with increasing input voltage and are sequentially turned off with decreasing input voltage”).) Nothing in the ’828 patent, however, suggests that stopping the drive current requires a complete absence of current flow, which as explained in Plaintiffs’ Opening Brief, is inconsistent with physical effects that are always present in electrical systems. (Dkt. 56 at 25-26.) As Dr. Zane explains, a person of ordinary skill in the art would understand that any practical circuit cannot completely block the flow of current and with respect to the embodiments of the ’828 patent, for example, a leakage current can flow to the LEDs even when the transistors are technically “off.” (Zane Decl. ¶48.) The presence of such a current would not prevent the invention from inhibiting light emission because the LEDs would not reach their turn-on voltages. (*Id.* ¶¶47-50.)

Moreover, the ’828 patent explains that blocking the drive current can be accomplished by providing “the ground voltage” (Dkt. 1-10 at 12:10-17), which itself implies some current flow. (*See* Zane Decl. ¶¶50-52.) As Dr. Zane explains, person of ordinary skill in the art would understand that only in an idealized situation is “ground” at zero potential. (*Id.* at ¶50.) Thus, a person of ordinary skill in the art would understand that completely stopping the drive current—as Defendant’s construction would seemingly require—is not possible in a real circuit implementing the invention of the ’828 Patent. (*Id.* at ¶¶51-53.)

In response, Defendant confusingly presented the following argument, which seems to effectively disclaim its construction as written:

Seoul raises the specter of an “absolute interpretation” of Satco’s construction that would mean that “unavoidable realities,” such as “leakage current” or radiofrequency induced noise on a conductor” would make the limitation impossible to meet. (SCCB at 25-26.) But that is not how a person of ordinary skill would understand the specification when it says “stop driving the LEDs,” and is not what Satco is suggesting. (*See* Shackle Decl., ¶¶104, 107-108.) The specification is clear that the LEDs are either driven or not driven; the drive current

is either on or off. If the drive current is blocked, then it is off/stopped. It is not merely obstructed. Thus, Satco's proposed construction should be adopted.

(Dkt. 65 at 39.) More specifically, Defendant's argument leaves unaddressed how a jury is to determine whether a drive current has been blocked. If, as Defendant concedes, some current flow can remain, then Defendant's construction as written is improper. Defendant's attempt to construe the construction rather than fixing it to resolve the defect is insufficient.

Finally, the declaration submitted by Defendant for this term suffers the same flaws as Defendant's analysis. In particular, the six paragraphs in Dr. Shackle's declaration do not suggest that the drive current must be entirely "stopped." (Dkt. 68 at ¶¶103-08.) Indeed, Dr. Shackle ignores the possibility that a small current significantly below the critical voltage (*i.e.*, turn on voltage) could be present. (*Id.*) Instead, he omits all discussion of the central disputed issue by merely providing unhelpful citations to the specification that the Court can review on its own. This kind of conclusory expert opinion is not the kind of extrinsic evidence that can aid the Court and it should not be credited at all. The Court, therefore, should reject Defendant's construction.

**18. "LED driving module . . . configured to . . ." - U.S. Patent No. 9,807,828, claims 1, 4, 7, and 9**

<b>Plaintiffs' Construction</b>	<b>Defendant's Construction</b>
<i>A module having components arranged to power light emitting diodes.</i>	<p>Definition in specification: A module configure to drive and control a light emitting diode after receiving AC voltage (this term should be compressively and broadly interpreted).</p> <p>Seoul's Patent Owner Preliminary Response in IPR2020-00247 has disclaimed the definition in the specification. As required by Seoul's prosecution disclaimer, this limitation requires the LED driving module to be a distinct structure from the dimming level detector, and to receive as its input the output from the dimming level detector.</p>

For this term Defendant yet again presents inconsistent constructions and relies on a flawed disclaimer argument. The relevant statements relied upon by Defendant, however, are not a clear and unambiguous disavowal of scope. *Cont'l Circuits*, 915 F.3d at 798. In this instance, Defendant attempts to take advantage of statements Plaintiffs made in explaining and applying

black letter claim construction law that Defendant violated in its invalidity theory:

It is a black letter principle that “[w]here a claim lists elements separately, the clear implication of the claim language is that those elements are distinct components of the patented invention.” *Becton, Dickinson*, 616 F.3d at 1254 (internal quotations omitted). Petitioner violates this principle by reading both the “dimming level detector” and the portion of the “LED driving module” that “compare[s] the detected dimming level to a reference value” onto the same component: “the low angle detection unit 42” of Kim-220. This violation is compounded in this case because the claims require “LED driving module” take as an input, the dimming level signal that is output from the “dimming level detector.” Ex. 1001 at cl. 1 (“a dimming level detector configured to detect a dimming level corresponding to the drive voltage, *wherein the LED driving module is configured to compare the detected dimming level* to a reference value.”). Thus, these two limitations logically cannot be satisfied by the same element. The Board should decline to institute on this basis alone.

Dkt. 66-15 at 24. (emphasis in original) This is simply a truism of patent law: two separate claim elements are just that—two separate claim elements. Defendant’s invalidity theory relied on improperly reading two claim elements on the same component in the prior art and as a result had its IPR not instituted. (Eisenberg Decl. Ex. 24.) Explaining the proper law disclaims nothing.

Moreover, as explained in Plaintiffs’ Opening Brief, the remainder of Plaintiffs’ argument in the IPR Preliminary Response was directed to explaining that claim 1 expressly requires particular linkages between the recited structures. (Dkt. 56 at 27.) Defendant’s insistence on adding those linkages already present in the claim to the definition of LED driving module introduces confusing redundancy to the claim, and therefore, should be rejected.

In short, Plaintiffs stand by their statements and arguments to the Patent Office which reflect true observations about claim construction law and the features of claim 1 but Defendant’s insistence on importing all of those back into the definition of LED driving module makes little sense. Thus, the Court should find no disclaimer and adopt Plaintiffs’ construction.

**19. “an imaginary line extending orthogonal to a longitudinal direction of extension of the first portion bisects the first portion into halves of equal dimension in the longitudinal direction, the halves being asymmetrically configured about the imaginary line” – U.S. Patent No. 9,978,919, claim 1**

<b>Agreed Construction</b>
<i>An imaginary line extending orthogonal to a longitudinal direction of extension of the first portion bisects the first portion into halves of equal areas in the longitudinal direction, the halves being asymmetrically configured about the imaginary line such that the asymmetric configuration acts to prevent generation and propagation of cracks.</i>

As discussed in its Opening Brief (Dkt. 56 at 4 n.3), in order to minimize the number of disputes, Plaintiffs adopted what appeared to be Defendant's proposed construction as provided in the joint claim chart (Dkt. 51 at 10-11.) That construction is provided in the table above.

Instead of accepting the apparent agreement, Defendant once again presents two materially different constructions, one purportedly based on "[p]lain meaning" and the other largely comprised of irrelevant argument. The Court's obligation is to resolve fundamental disputes regarding the scope and meaning of claim terms. *O2 Micro*, 521 F.3d at 1362. Defendant's confusing presentation renders it unclear whether a dispute exists. In addition, as discussed above with respect to "spacer layer" (term 15), it would be improper to include argument in a jury instruction. *See Cordis*, 561 F.3d at 1337. The Court, therefore, need only adopt the actual meaning agreed to by the parties: "*An imaginary line extending orthogonal to a longitudinal direction of extension of the first portion bisects the first portion into halves of equal areas in the longitudinal direction, the halves being asymmetrically configured about the imaginary line such that the asymmetric configuration acts to prevent generation and propagation of cracks.*"

**20. "a first portion of the separation region positioned between the first top lead and the second top lead has a different shape than a second portion of the separation region positioned between the first bottom lead and the second bottom lead" - U.S. Patent No. 9,978,919, claim 1**

<b>Plaintiffs' Construction</b>	<b>Defendant's Construction</b>
<i>The geometric outline of the space between the two top leads is different from the geometric outline of the space between the two bottom leads.</i>	Plain meaning, i.e., shapes are different when they are not geometrically "similar," i.e. when one shape cannot be obtained from the other shape by uniformly scaling (enlarging or reducing), possibly with additional translation, rotation and reflection.  Seoul's Patent Owner Preliminary Response in IPR2020-00151 has disclaimed the plain meaning of this limitation. As required by Seoul's prosecution disclaimer, this limitation requires first and

	second portions that are not “the same or substantially the same shape.” Examples of shapes that are not different according to Seoul’s prosecution disclaimer include shapes that are not geometrically similar due to differences in one dimension but not others, such as portions arranged in a stepped structure. Shapes also are not different if they “track each other,” “have the same overall structure,” or “bend in the same way.”
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**a) Defendant Fails to Present a Construction for the Selected Term**

The term that Defendant selected for construction is “a first portion of the separation region positioned between the first top lead and the second top lead has a different shape than a second portion of the separation region positioned between the first bottom lead and the second bottom lead.” Defendant largely ignores that claim language by addressing only two words from that claim phrase – “different shape.” Despite that clear and simple two-word phrase, Defendant first proposes a 33-word construction that includes the word “shape” without construction, the abbreviation for the Latin phrase *id est*, and a parenthetical. No reasonable jury could parse this potential construction to assess what is required by or excluded from the claim scope. Indeed, the construction itself fails to identify the structures associated with the “different shape” recitation, leaving Defendant’s construction, at best, confusingly incomplete.

**b) Defendant’s Disclaimer Argument Is Unsupported by the Record Before the Patent Trial and Appeal Board**

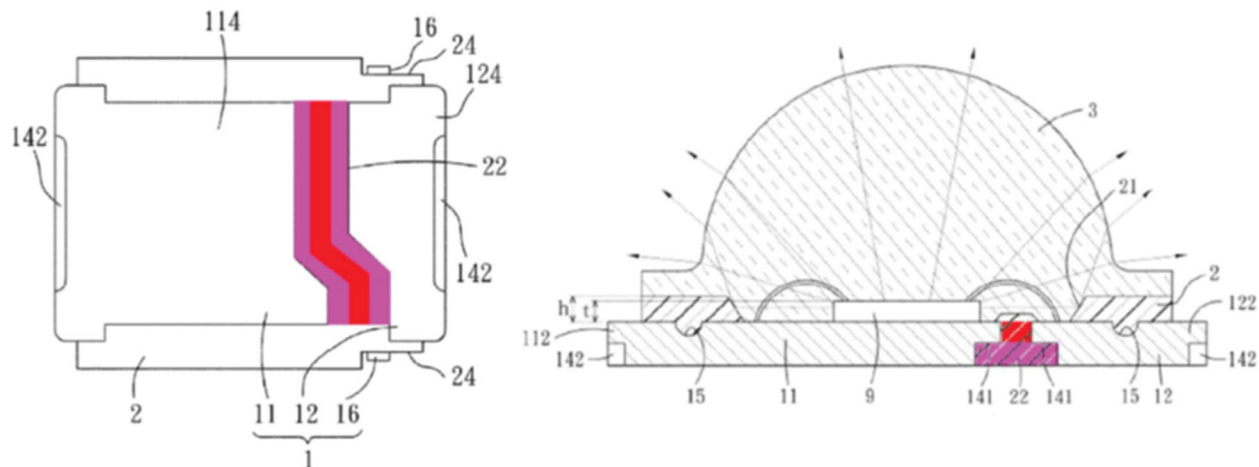
Defendant’s second construction, which purports to rely on IPR2020-00151, repeats many of these same errors. In particular, once again Defendant merely uses the term “shape,” indicating that Defendant believes no construction is necessary for that word. Despite that effective admission, Defendant proceeds to identify “examples” that it deems outside the scope of the claim term. Such “examples” are not a construction of the scope or meaning of the claim term, but instead represent specific factual predicates that Defendant believes should be sufficient to establish non-infringement. To the extent that any construction is provided by Defendant, that construction comprises “this limitation requires first and second portions that are not ‘the same or substantially



the same shape.” Plaintiffs have no objection to the adoption of that construction, but object to the remaining verbiage, which obscures rather than clarifies the meaning of the claim phrase.

**c) Defendant’s Attempt to Exclude a “Stepped Structure” from the Claim Scope Is Baseless**

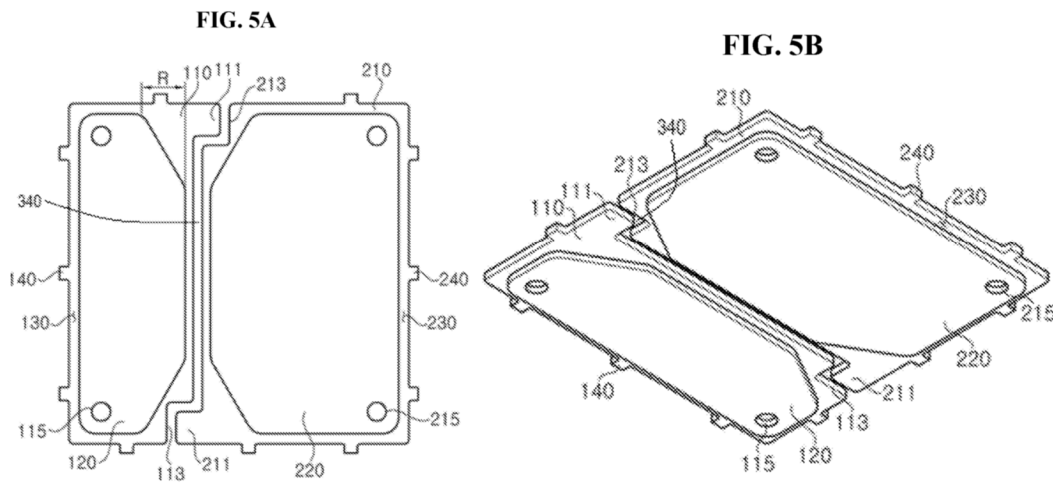
Although the foregoing provides sufficient basis to reject its proposal, Defendant’s discussion of “stepped structure” merits an additional response. As Defendant notes, Plaintiffs’ response in IPR2020-00151 distinguished the Wang reference as relied on by Defendant because those figures failed to show separation regions having “different shapes.” (Dkt. 65 at 48-49.) Indeed, Defendant reproduced the below images from Plaintiffs’ submission, which provided colored outlines to show that the shapes were the same:



(Dkt. 65 at 49 (citing Dkt. 66-16 at 9).) Rather than addressing the actual argument made by Plaintiffs, Defendants assert that Plaintiffs somehow disclaimed “a ‘stepped structure.’” (*Id.*) The use of quotation marks without a following citation suggests that Plaintiffs expressly argued that the claimed invention is distinct from a “stepped structure,” a position that is simply false. Indeed, the lack of citation to the IPR record from which this purported quotation was taken confirms that no such distinction was made. In addition, as shown in the image above right, a stepped structure is a feature that is viewed in cross section. As shown in the embodiment depicted in figures 5A



and 5B of the '919 patent (reproduced below), that preferred embodiment includes a cross-sectional stepped structure:



In other words, rather than a cross-section, Plaintiffs' argument was directed to the actual claim language – “a first portion of the separation region positioned between the first top lead and the second top lead has a different shape than a second portion of the separation region positioned between the first bottom lead and the second bottom lead.” No fair reading of the IPR record indicates that Plaintiffs disclaimed all possible stepped structures, and therefore, that portion of Defendant's construction should be rejected. Instead, the Court should construe this term to mean “*The geometric outline of the space between the two top leads is different from the geometric outline of the space between the two bottom leads.*”

## 21. “bend” - U.S. Patent No. 9,978,919, claim 1

Plaintiffs' Construction	Defendant's Construction
Plain and ordinary meaning or a <i>curved or angular change in direction</i> .	Plain meaning: a change in the primary direction of the first portion. Seoul's Patent Owner Preliminary Response in IPR2020-00151 has disclaimed the plain meaning of this limitation. As required by Seoul's prosecution disclaimer, the limitation requiring a “bend” requires a change in the primary direction of the first portion sufficient to prevent the generation and propagation of cracks.

In another strange analysis, Defendant asserts that the parties are in agreement. (Dkt. 65 at 50.) Rather than agreement, Plaintiffs objected to Defendant's proposal. (Dkt. 56 at 28-29.) In

addition, Defendant asserts that Plaintiffs committed some form of disclaimer with respect to the claim term “bend.” (Dkt. 65 at 50.) Rather than actually address how or where such a disclaimer purportedly occurred with respect to that claim term, Defendant refers the Court to its discussion of other claim terms “above in the preceding sections.” (*Id.*) Defendant’s failure to identify any basis for applying the law of disclaimer here renders its truncated analysis unsupported. The Court, therefore, should construe this term to mean “*a curved or angular change in direction.*”

**22. “fine protrusion” - U.S. Patent No. 9,978,919, claims 5-7**

<b>Plaintiffs’ Construction</b>	<b>Defendant’s Construction</b>
Plain and ordinary meaning or <i>a narrow projection from a structure.</i>	A portion of the lead that extends from the side surface a distance that is less than the distance extended by the at least one protrusion.

As explained in Plaintiffs’ Opening Brief, Defendant’s construction incorrectly refers to the distance the protrusion “extends from the side surface” rather than its width. (Dkt. 56 at 29.) Defendant fails to respond to Plaintiffs’ analysis (Dkt. 65 at 50-51), which is therefore, un rebutted. For that reason alone, Defendant’s proposal should be rejected.

In addition, Defendant’s assertion that claim differentiation requires the “fine protrusion” to “be smaller than the claimed ‘at least one protrusion’” (Dkt. 65 at 50-51), lacks merit. The parenthetical provided after Defendant’s citation to *Phillips* – “finding that a claim to ‘steel baffles’ showed that the term ‘baffles’ by itself did not require the baffles to be made of steel” – highlights the flaw in Defendant’s logic. In particular, the underlying “logic” employed by Defendant is that, by using the adjective “fine” to describe a “protrusion,” any other use of the term “protrusion” without that adjective must necessarily be less “fine.” Rather than employ that dubious logic, *Phillips* merely concluded that the terms “steel baffles” and “baffles” should not be co-extensive, *i.e.*, the adjective “steel” should not be imported into the broader recitation “baffles.” *Phillips*, 415 F.3d at 1314 (“To take a simple example, the claim in this case refers to ‘steel baffles,’ which strongly implies that the term ‘baffles’ does not inherently mean objects made of steel.”). An apt

analogy is again a table, which might be made of steel, plastic, or wood. A claim recitation referring to a “wood table” would not mean that the recitation “table” excludes wood. Instead, the latter recitation simply does not require a specific material. Applying that same logic here, the “fine protrusion” does not apply any particular scope for the broader term “protrusion,” which could be either fine or broad.

As to Defendant’s discussion of the specification of the ’919 patent, what Defendant seeks is to improperly import limitations from the specification into the claims. Defendant does not assert that the specification adopted lexicography or disclaimed the full scope of the term “projection.” (Dkt. 65 at 51-52.) Instead, Defendant merely points to aspects of the disclosed embodiments. (*Id.*) That, however, is not a sufficient basis to limit the full claim scope. *See Thorner*, 669 F.3d at 1365.

**23. “undercut sidewall” - U.S. Patent No. 10,134,967, claims 1 and 9**

<b>Plaintiffs’ Construction</b>	<b>Defendant’s Construction</b>
Plain and ordinary meaning or <i>a space formed where the bottom of a sidewall is indented relative to the top.</i>	Product-by-process limitation. For purposes of infringement: sidewall shape produced by cutting away material from the bottom part of a sidewall. For purposes of invalidity: a space formed where the bottom of a sidewall is indented relative to the top.

Here again, Defendant asserts that its construction is founded on the theory of disclaimer. (Dkt. 65 at 52-53.) Both Defendant’s analysis and its conclusion lack merit.

According to Defendant, “[i]n IPR2020-00410, Seoul asserted that ‘an undercut is like a ‘carving’ into the lead frame,’ and that ‘‘undercut’ is defined to mean ‘to cut away material from the underside of (an object) so as to leave an overhanging portion in relief.’” (Dkt. 65 at 52-53 (citing Dkt. 66-18 at 14).) Defendant’s quotations, however, pointedly omit essential context. The sentence comprising the first quotation provides, in full “And, as understood by both the Examiner and Patent Owner during prosecution, an undercut is like a ‘carving’ into the lead frame.” (Dkt. 66-18 at 14.) In other words, Plaintiffs were discussing the prosecution history, but were not advocating for any specific construction for the claim term “undercut” to be applied in the IPR.

(*Id.*) Indeed, Plaintiffs elsewhere noted that “[b]oth parties agree that no construction of ‘undercut sidewalls’ is necessary.” (*Id.* at 19.) In this context, it is Defendant rather than Plaintiffs that seeks to retreat from a position previously taken.

Moreover, even if the first quotation were deemed relevant to the scope and meaning of the term “undercut,” the statement “is like a ‘carving’ into a lead frame” is far from the definitive statement required to impose disclaimer. *Cont’l Circuits*, 915 F.3d at 798 (“To operate as a disclaimer, the statement in the prosecution history must be clear and unambiguous, and constitute a clear disavowal of scope.”) (citation omitted, emphasis added); *see also Openwave*, 808 F.3d at 513 (the cited statement must “be so clear as to show reasonable clarity and deliberateness, and so unmistakable as to be unambiguous evidence of disclaimer.”) (citations omitted, emphasis added). The quoted statement regarding an “undercut” being “like a ‘carving’” merely suggests a helpful analogy from the original prosecution history, and not a narrowing disclaimer. Moreover, Defendant’s construction does not seek to enforce that alleged disclaimer, but instead provides a narrower and different meaning.

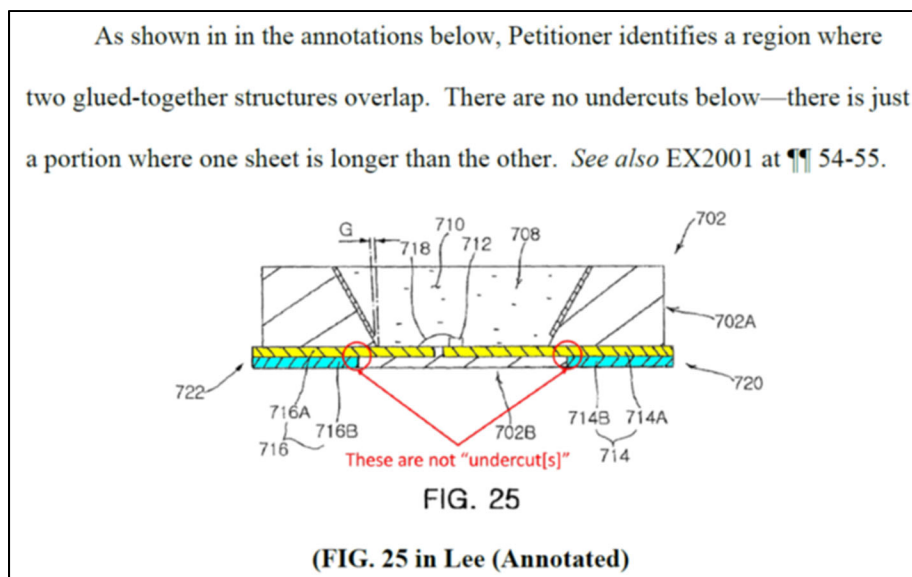
With respect to the second quotation, Plaintiffs assert that no disclaimer is possible as a matter of law. In particular, rather than a statement by Plaintiffs, what Defendant cites is actually a quotation to a statement by the Examiner:

Examiner defined “undercut sidewalls” of the “lead frame” to mean that “sidewalls that have ‘cut away material from so as to leave a portion overhanging, as in carving or sculpture.” EX1002 at 78, April 30, 2018 Final Office Action. Patent Owner stated “‘undercut’ is defined to mean ‘to cut away material from the underside of (an object) so as to leave an overhanging portion in relief.” EX1002 at 58, June 19, 2018 Amendment.

(Dkt. 66-18 at 14.) Defendant does not assert that the Examiner somehow disclaimed claim scope on behalf of Plaintiffs. To the contrary, Federal Circuit law has expressly rejected that reasoning. *Sorensen*, 427 F.3d at 1379 (“it is the applicant, not the examiner, who must give up or disclaim

subject matter that would otherwise fall within the scope of the claims’); *Alfred E. Mann Found. for Sci. Research v. Cochlear Corp.*, 841 F.3d 1334, 1341 (Fed. Cir. 2016) (“an examiner’s unilateral statement does not give rise to a clear disavowal of claim scope by the applicant”). Defendant’s argument, therefore, is legally unfounded.

Defendant’s later citation to a discussion of the Lee reference is also misdirected. (Dkt. 65 at 53.) According to Defendant, “Seoul distinguished the prior art used in the IPR (‘Lee’), stating that Lee has ‘no cut away like carving – there is just a larger sheet of metal glued on a smaller sheet of metal.’” (*Id.* (citing Dkt. 66-18 at 53).) Although Defendant correctly quotes a line from the record out of context, it fails to address the actual argument as made in context. The actual argument made was that Lee failed to disclose an undercut because:



(Dkt. 66-18 at 42.) The point that Plaintiffs made was that neither the top sheets (716A and 714A, colored yellow) nor the bottom sheets (714A and 714B, colored green) has an undercut. Instead, because Lee used two sheets glued together, no structure meets the undercut recitation. (*Id.*) Nowhere did Plaintiffs assert that an actual step of “carving” was required. Nor indeed, did Plaintiffs seek to differentiate the claims on any basis other than structure. Thus, to the extent that

a disclaimer occurred, that disclaimer could only encompass a structure with sheets glued to together as disclosed in Lee. Defendant's assertion of a broader disclaimer whereby Plaintiffs rewrote the claims in product-by-process format cannot be reconciled with the cited record. Stated differently, Defendant does not and cannot identify a statement by which Plaintiffs asserted anticipation requires a particular method of production, and therefore, the assertion that the claims must be narrowed beyond their expressly structural format is baseless. Instead, this term means "*a space formed where the bottom of a sidewall is indented relative to the top.*"

**24. "lead frame" - U.S. Patent No. 10,134,967, claims 1-3, 5-11, 13-16**

<b>Plaintiffs' Construction</b>	<b>Defendant's Construction</b>
<i>Metal portion of a device package that makes electrical connections between a chip and other parts of the circuitry. Each lead frame is a single, unitary piece.</i>	Ordinary meaning: the metal portion of a device package that makes electrical connections between a chip and the circuit external to the package.  Seoul's Patent Owner Preliminary Response in IPR2020-00410 has disclaimed the ordinary meaning of this limitation. As required by Seoul's prosecution disclaimer, this limitation requires that the metal portion of a device package that makes electrical connections between a chip and the circuitry external to the package is a single, unitary piece.

Here again, Defendant confusingly presents two different claim constructions. (Dkt. 65 at 54.) Based on the argument presented (*id.* at 54-55), it appears that Defendant is only pursuing the alleged disclaimer.

As explained in Plaintiffs' Opening Brief, Defendant's actual construction (as distinct from the improper argument) poses uncertainty. (Dkt. 56 at 31.) In particular, Plaintiffs explained that that construction as written "implies that the device as a whole includes at most a single-piece lead frame" despite the fact that claim 1 expressly recites "a first lead frame and a second lead frame." (*Id.*) In response, Defendant urges that its "position is simply that . . . each lead frame is a single unitary piece, not two pieces that were attached." (Dkt. 65 at 55.) With that clarification, which renders Defendant's construction consistent with Plaintiffs, it appears that no dispute remains. The term "lead frame," therefore, should be construed to mean "*Metal portion of a device package that*

*makes electrical connections between a chip and other parts of the circuitry. Each lead frame is a single, unitary piece.”*

**25. “fixing space” - U.S. Patent No. 10,134,967, claims 1, 2, 9, 10**

<b>Plaintiffs’ Construction</b>	<b>Defendant’s Construction</b>
Plain and ordinary meaning or a <i>space complementary to the undercuts in the sidewall that provide attachment.</i>	The space complementary to the undercut sidewalls of the lead frames, from the top surface of the lead frames to the bottom surface of the lead frames.

The final disputed claim term is “fixing space.” Defendant’s analysis of this dispute, however, is unclear. In particular, nowhere does Defendant suggest that the portion of its construction after the comma (*i.e.*, “from the top surface of the lead frames to the bottom surface of the lead frames”) should be adopted. (Dkt. 65 at 55-56.) It appears, therefore, that Defendant no longer believes that portion of its proposal is necessary. (*Id.*)

Instead, Defendant asserts that “[t]he primary dispute concerning this phrase is whether the claimed ‘fixing space’ is complementary to the ‘undercuts’ in the sidewall of the lead frame (Seoul’s position), or complementary to the ‘undercut sidewalls’ of the lead frames (Satco’s position.” (*Id.* at 55.) To the extent that Defendant’s argument is understood, its complaint appears to be that Plaintiffs’ language does not merely repeat the language of the claim verbatim. That, of course, is how claim construction works. To the extent that Defendant would rather the claim language be provided to the jury as written, Plaintiffs would accept that alternative.

**IV. CONCLUSION**

For the foregoing reasons, Plaintiffs request that the Court adopt the claim constructions they proposed and reject those presented by Defendant.

Dated: September 8, 2020  
New York, New York.

Respectfully submitted,

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